

REMARKS

The present application was filed on March 27, 2001 (claiming priority from United States Provisional Application Number 60/245,396, filed November 2, 2000) with claims 1-43. Claims 7-21, 28-32 and 39-43 have been withdrawn from consideration in response to a restriction requirement. As stated by the Examiner on page 2 of the Office Action, previously withdrawn claims 4, 25 and 36 are now included into consideration. Therefore, claims 1-6, 22-27 and 33-38 are presented herein for examination on the merits. Applicant acknowledges that while claims 7-21, 28-32, and 39-43 have been withdrawn from consideration, as highlighted above, these claims are still pending in the present application. Claims 1, 4, 22, 25, 33 and 36 are proposed to be amended herein. No new matter has been introduced. Support for the amendments made to claims 1, 22 and 33 can be found, for example, on page 5, lines 5-27, and page 11, lines 7-26, of the specification. Claims 5, 26 and 37 are proposed to be cancelled without prejudice herein.

In the outstanding Office Action, the Examiner rejected claims 1-3, 6, 22-24, 27, 33-35 and 38 under 35 U.S.C. §112, first paragraph, as allegedly failing to reasonably provide enablement for a method of determining whether protein is globular using shifted hydrophobicity distribution as addressed in general in claim 1. Also, the Examiner rejected claims 1-4, 6, 22-25, 27, 33-36 and 38 under 35 U.S.C. §112, first paragraph, as allegedly failing to reasonably provide enablement for a method of determining "spatial" distribution using shifted distribution in general (i.e. as in claim 1) or zero-order moment of hydrophobicity (as in claim 4). The Examiner also rejected claims 1, 6, 22, 27, 33 and 38 under 35 U.S.C. §103(a) as allegedly being unpatentable over Eisenberg et al. (Faraday Symposia of the Chemical Society, 1982, 17, 109-120 (hereinafter "Eisenberg")). Also, the Examiner also rejected claims 1, 3, 6, 22, 24, 27, 33, 35 and 38 under 35 U.S.C. §103(a) as allegedly being unpatentable over Cornette et al. (*Hydrophobicity Scales and Computational Techniques for Detecting Amphipathic Structures in Proteins*, J. MOL. BIOL. 195, pgs. 659-685 (1987) (hereinafter "Cornette")) in view of Eisenberg.

The comments of the Examiner in forming the rejections are acknowledged and have been carefully considered

FORMAL REJECTIONS

As mentioned above, the Examiner rejected claims 1-3, 6, 22-24, 27, 33-35 and 38 under 35 U.S.C. §112, first paragraph, as allegedly failing to reasonably provide enablement for a method of determining whether protein is globular using shifted hydrophobicity distribution as addressed in general in claim 1. Specifically, the Examiner stated that “specification does not teach how to determine whether protein is globular by merely using ‘shifted hydrophobicity’ as addressed in claim 1.” See Office Action, page 3.

Applicant has amended independent claims 1, 22 and 33, from which claims 2, 3 and 6, 23, 24, 27, and 34-35 ultimately depend, thereby overcoming the Examiner’s rejections. Support for the amendments made to claims 1, 22 and 33 can be found, for example, on page 5, lines 5-27, and page 11, lines 7-26, of the specification. Applicant submits that amended claims 1, 22 and 33 (and claims dependent therefrom) are fully enabled by the specification. As stated by the Examiner on page 3 of the Office Action, “with respect to determining whether a query protein is globular, specification teaches how to use second-order moment of hydrophobicity,” as well as “with respect to use of zero- or second order moments.”

Consequently, it is Applicant’s position that one of ordinary skill in the art would be able to make and/or use the invention with the claimed breadth without an undue amount of experimentation. Thus, Applicant respectfully requests reconsideration and withdrawal of the rejection of claims 1-3, 6, 22-24, 27, 33-35 and 38 under 35 U.S.C. §112, first paragraph.

As further highlighted above, the Examiner rejected claims 1-4, 6, 22-25, 27, 33-36 and 38 under 35 U.S.C. §112, first paragraph, as allegedly failing to reasonably provide enablement for a method of determining “spatial” distribution using shifted distribution in general or zero-order moment of hydrophobicity.

As Applicant previously pointed out, Applicant has amended independent claims 1, 22, and 33, from which claims 2, 3, 6, 23, 24, 27, 34 and 35 ultimately depend, as well as amending claims 4, 25 and 36 (which also ultimately depend from claims 1, 22 and 33), thereby overcoming the Examiner’s rejection. Applicant submits that amended claims 1, 22 and 33 (and claims dependent therefrom) are fully enabled by the specification as a result of the included limitation of using second-order moment hydrophobicity. Consequently, Applicant submits that

the specification does enable any person skilled in the art to which the invention pertains, or with which it is most nearly connected, to use the invention commensurate in scope with the claims.

Given the above remarks, Applicant respectfully requests reconsideration and withdrawal of the rejection of claims 1-4, 6, 22-25, 27, 33-36 and 38 under 35 U.S.C. §112, first paragraph.

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PRIOR ART REJECTIONS

As mentioned above, the Examiner rejected claims 1, 6, 22, 27, 33 and 38 under 35 U.S.C. §103(a) as allegedly being unpatentable over Eisenberg. On page 5, 5th paragraph, of the Office Action, the Examiner stated that,

10 [a]lthough [Eisenberg] is not directed specifically to determining whether a protein is globular (as in instant claims) it teaches that globular proteins have a particular pattern of dipole hydrophobic moments (see pages 115-116) and that quadruple hydrophobic moment indicates when a protein is globular (see abstract, end of first paragraph). Thus it would be obvious to one skilled in the art that comparing
15 hydrophobic moments can indicate whether a protein is globular.

Applicant has amended independent claims 1, 22, and 33, from which claims 6, 27 and 38 ultimately depend, to include subject matter of previously enumerated claim 5, thereby overcoming the Examiner's rejection. Applicant submits that Eisenberg does not teach or
20 suggest the steps of determining an adjusted second-order moment of hydrophobicity, determining a profile of the second-order moment of hydrophobicity, and comparing the profile to a globular protein profile to determine if the protein is a globular protein. Furthermore, the subject matter of previously enumerated claim 5 was not included in the outstanding rejection. As such, Applicant respectfully requests reconsideration and withdrawal of the rejection of
25 claims 1, 6, 22, 27, 33 and 38 under 35 U.S.C. §103(a) as allegedly being unpatentable over Eisenberg.

As mentioned above, the Examiner also rejected claims 1, 3, 6, 22, 24, 27, 33, 35 and 38 under 35 U.S.C. §103(a) as allegedly being unpatentable over Cornette in view of Eisenberg. Beginning on page 6, 5th paragraph, of the outstanding Office Action, the Examiner stated that,

30 it would be obvious to one skilled in the art to use presentation of hydrophobicity described in Cornette to be used to compare structural patterns in

different proteins, and because Eisenberg indicates that various estimates of hydrophobicity demonstrate particular patterns for globular proteins, one would be motivated to use hydrophobicity moments as described in Cornette as a tool for determining whether a protein of interest has a globular structure.

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As noted above, Applicant has amended independent claims 1, 22, and 33, from which claims 3, 6, 24, 27, 35 and 38 ultimately depend, to include subject matter of previously enumerated claim 5, thereby overcoming the Examiner's rejection. Applicant submits that neither Eisenberg nor Cornette teach or suggest the steps of determining an adjusted second-order moment of hydrophobicity, determining a profile of the second-order moment of hydrophobicity, and comparing the profile to a globular protein profile to determine if the protein is a globular protein. Furthermore, similar to the rejection discussed above, the subject matter of previously enumerated claim 5 was not included in the outstanding rejection. As such, Applicant respectfully requests reconsideration and withdrawal of the rejection of claims 1, 3, 6, 22, 24, 27, 33, 35 and 38 over Cornette in view of Eisenberg.

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Accordingly, Applicant submits that all claims presented here for examination, i.e., claims 1-6, 22-27 and 33-38, are in condition for allowance and such favorable action is earnestly solicited.

If any outstanding issues remain, or if the Examiner has any further suggestions for expediting allowance of this application, the Examiner is invited to contact the undersigned at the telephone number indicated below.

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The Examiner's attention to this matter is appreciated.

Respectfully submitted,

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Kevin M. Mason
Attorney for Applicant(s)
Reg. No. 36,597
Ryan, Mason & Lewis, LLP
1300 Post Road, Suite 205
Fairfield, CT 06430
(203) 255-6560

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